

WHAT IS CLAIMED IS:

1                    1.        An EEPROM integrated circuit structure, the structure comprising:  
2        a substrate including a surface region, the surface region being provided within a first cell  
3        region; a gate dielectric layer of first thickness overlying the surface of the substrate  
4        region; a select gate overlying a first portion of the gate dielectric layer; a floating gate  
5        floating gate overlying a second portion of the gate dielectric layer and coupled to the  
6        select gate;  
7                    an insulating layer overlying the floating gate; a control gate  
8        overlying the floating gate overlying the insulating layer and coupled to the floating gate;  
9        a tunnel window provided in a stripe configuration within a portion of the gate dielectric  
10       layer, the portion of the gate dielectric layer being of a second thickness, the second  
11       thickness being less than the first thickness.

1                    2.        The structure of claim 1 wherein the gate dielectric layer comprises  
2        a silicon dioxide.

1                    3.        The structure of claim 1 wherein the tunnel window is characterized  
2        by a width of less than 0.25 microns.

1                    4.        The structure of claim 1 wherein the insulating layer is an ONO  
2        layer coupled between the floating gate and the control gate.

1                    5.        The structure of claim 1 wherein the floating gate has a design  
2        width of 1.5 microns.

1                    6.        The structure of claim 1 wherein the tunnel window is provided  
2        using a phase shift mask.

1                    7.        The structure of claim 1 wherein the stripe configuration extends  
2        through a plurality of cells, each of the cells being separated by a field oxide region.

1                    8.        The structure of claim 1 wherein the substrate is a semiconductor  
2        wafer.

1                   9.       The structure of claim 1 wherein the select gate, floating gate, and  
2 control gate are provided within a cell region, the cell region being provided within an  
3 isolation region.

1                   10.     The structure of claim 1 wherein the stripe configuration runs  
2 through the first cell region to other cell regions numbered from 2 through N, where N is  
3 an integer greater than 2.

1                   11.     An EEPROM integrated circuit structure, the structure comprising:  
2 providing a substrate including a surface region, the surface region being provided within  
3 a first cell region; forming a gate dielectric layer of first thickness overlying the surface of  
4 the substrate region; patterning the gate dielectric layer to form a plurality of stripes, each  
5 of the stripes being characterized by a second thickness, the second thickness being less  
6 than the first thickness, each of the stripes having a predetermined width and a  
7 predetermined length, at least one of the stripes including a stripe portion traversing  
8 through a portion of the first cell region and other cell regions;  
9                         forming a floating gate overlying a portion of the gate dielectric  
10 layer, the portion of the gate dielectric layer including the stripe portion traversing through  
11 the portion of the gate dielectric layer;  
12                         forming an insulating layer overlying the floating gate; forming a  
13 control gate overlying the floating gate overlying the insulating layer and coupled to the  
14 floating gate; and  
15                         wherein the stripe portion traverses through the portion of the first  
16 cell region includes a tunnel window for a memory device.

1                   12.     The method of claim 11 wherein the gate dielectric layer comprises  
2 a silicon dioxide.

1                   13.     The method of claim 11 wherein the tunnel window is characterized  
2 by a width of less than 0.25 microns.

1                   14.     The method of claim 11 wherein the insulating layer is an ONO  
2 layer coupled between the floating gate and the control gate.

1                    15.    The method of claim 11 wherein the floating gate has a design  
2 width of 1.5 microns.

1                    16.    The method of claim 11 wherein the tunnel window is provided  
2 using a phase shift mask.

1                    17.    The method of claim 11 wherein the stripe configuration extends  
2 through a plurality of cells, each of the cells being separated by a field oxide region.

1                    18.    The method of claim 11 wherein the substrate is a semiconductor  
2 wafer.

1                    19.    The method of claim 11 wherein the floating gate and the control  
2 gate are provided within a cell region, the cell region being provided within an isolation  
3 region.

1                    20.    The method of claim 11 wherein the stripe configuration runs  
2 through the first cell region to the other cell regions, the other cell regions being numbered  
3 from 2 through N, where N is an integer greater than 2.